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**Ohio State Engineer**

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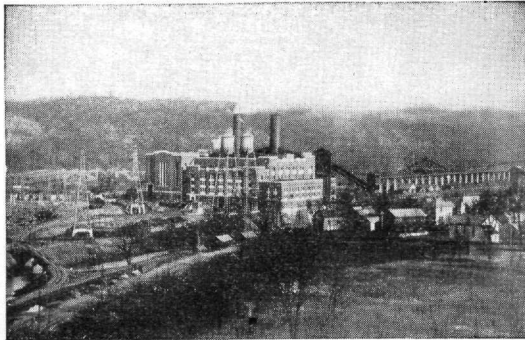
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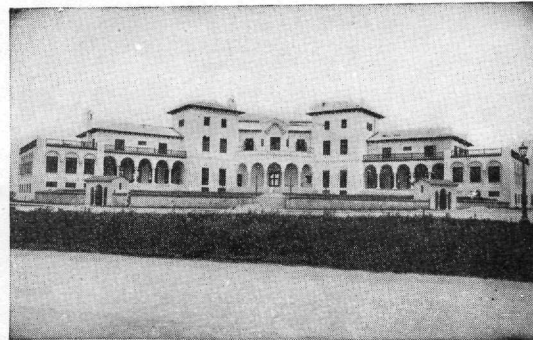
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# HOME SERVICE CREATES FOREIGN EXPANSION



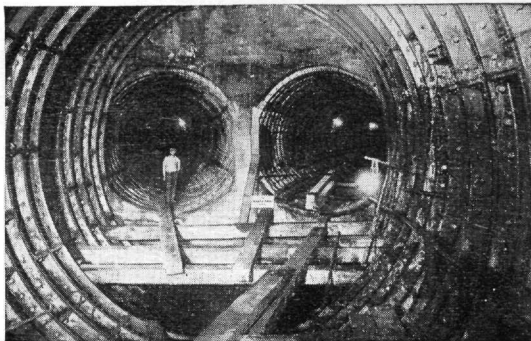
PHILO POWER HOUSE  
NORTH AMERICA



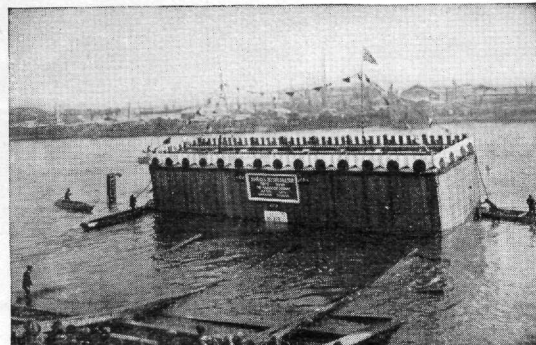
LIMA COUNTRY CLUB  
SOUTH AMERICA

OVER a quarter of a century ago four young men, with a broad background of training and experience in the engineering construction field, formed The Foundation Company. Today the company is at work in every continent, in both hemispheres, and on both sides of the Equator, on engineering construction of almost every known type.

The Foundation Company started in 1902 with small plant, few men, and two contracts; twenty-five years later its expansion includes a number of affiliated companies: The Foundation Company, The Foundation Company, Ltd., of Great Britain, The Foundation Company of Canada, Ltd., and The Foundation Company (Foreign) are now working throughout the United States, and in twelve foreign countries.



LONDON SUBWAYS  
EUROPE



TOKYO BRIDGE CAISSON  
ASIA

As indicative of the service rendered by The Foundation Company over this period of years, these partial lists of repeat contracts have special significance. In one case no less than thirty contracts have been awarded by one owner.

#### WHITAKER GLESSNER CO.

Warehouse	1916
Foundations	1917
Warehouse	1923

#### AMERICAN GAS AND ELECTRIC CO.

Power House	1918
Power House	1923
Power House	1926

#### GRAND TRUNK RAILWAY

Bridge Piers	1917
Bridge Work	1919
Tunnel	1920

## THE FOUNDATION COMPANY

CITY OF NEW YORK

*Office Buildings  
Industrial Plants  
Warehouses  
Railroads and Terminals  
Foundations and Underpinning  
Filtration and Sewage Plants*

ATLANTA  
PITTSBURGH  
CHICAGO  
SAN FRANCISCO

LOS ANGELES  
MEXICO CITY  
CARTAGENA, COLOMBIA  
LIMA, PERU

MONTREAL  
LONDON, ENGLAND  
BRUSSELS, BELGIUM  
TOKYO, JAPAN

*Hydro-Electric Developments  
Power Houses  
Highways  
River and Harbor Developments  
Bridges and Bridge Piers  
Mine Shafts and Tunnels*

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES



## *To the Daniel Boone in every man!*

**I**T is still the day of the trail blazer. In the telephone industry pioneers are cutting new paths in the knowledge of their art.

This industry is continually on the threshold of new ideas, with each development opening up a vista for its explorers to track down.

Their activity will be as engineers in laboratory research and

plant operation, but also in supervisory and executive positions — planning the course of activity for groups of men and carrying the burdens of administration.

The responsibility and opportunity of management take on an increasing importance in an industry such as this, where forward-looking leadership must point the way to ever better public service.

JANUARY, 1928

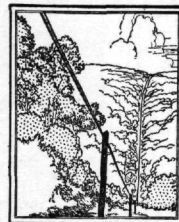


*Today telephone cable, carrying hundreds of circuits, crosses Daniel Boone country on the way from New York to Chicago*



The alloy of lead and antimony which forms the rugged water-tight covering of this cable is but one development among many made in Bell Telephone Laboratories.

In actually building this line, Daniel Boones of telephony blazed a trail of poles and heavy cable through dense woods, over rivers and across five ranges of mountains.



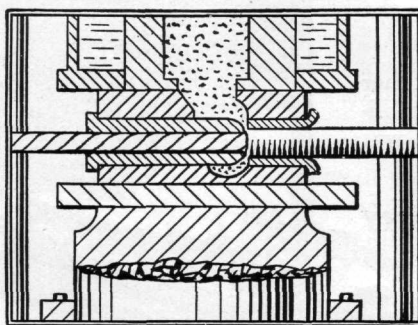
## Trail blazing in cable manufacture at Western Electric

ALL the trail blazing and pioneering work of telephony is not done alone in laboratory and field. Western Electric, as manufacturer for the Bell system since 1882, has done its share — for example in the cable shop, helping to make possible the New York to Chicago cable.

The lead press illustrates the practice of the engineers of this company continually to work out new types of machinery that will improve the quality of output and at the same time increase production. This ingenious machine turns out thousands of miles of lead-

covered cable every year, with an efficiency far greater than was ever possible under the old laborious hand methods. It is the point of view which seeks the better way that enables Western Electric to supply the nation's ever increasing telephone demands.

Western Electric engineers prepared for present needs long ago, and right now they are getting ready for the future. The men of this company are pioneers — opening up new country in manufacturing methods and blazing the trail to more economical yet more efficient production.



*The lead sheathing press revolutionized the cable covering process.*

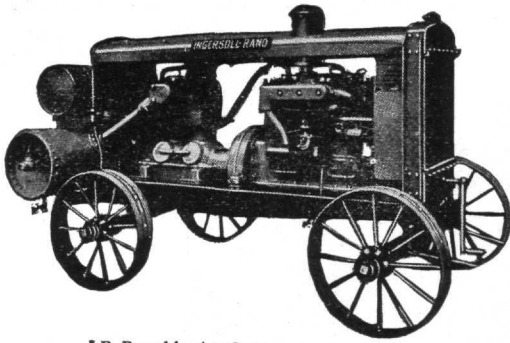
## BELL SYSTEM

*A nation-wide system of 18,000,000 inter-connecting telephones*



**"OUR PIONEERING WORK HAS JUST BEGUN"**

JANUARY, 1928



I-R Portable Air Compressor

### *The \$10,000,000 Louisville Hydro-Electric Project*

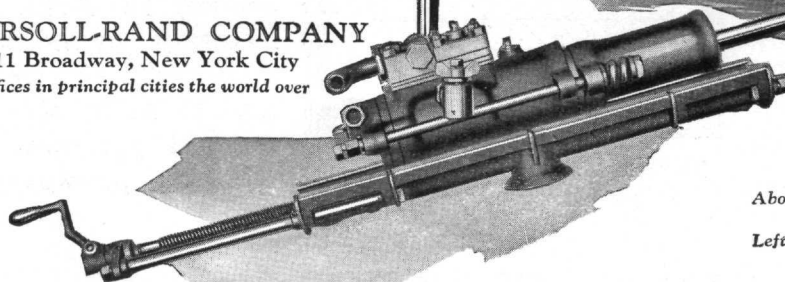
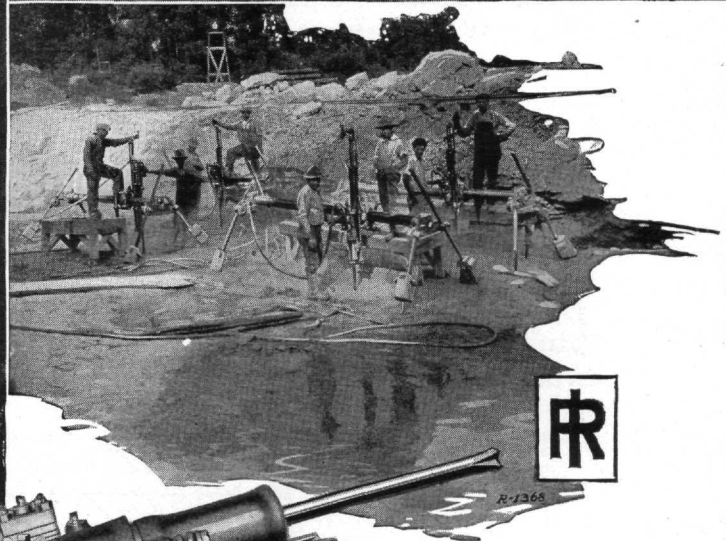
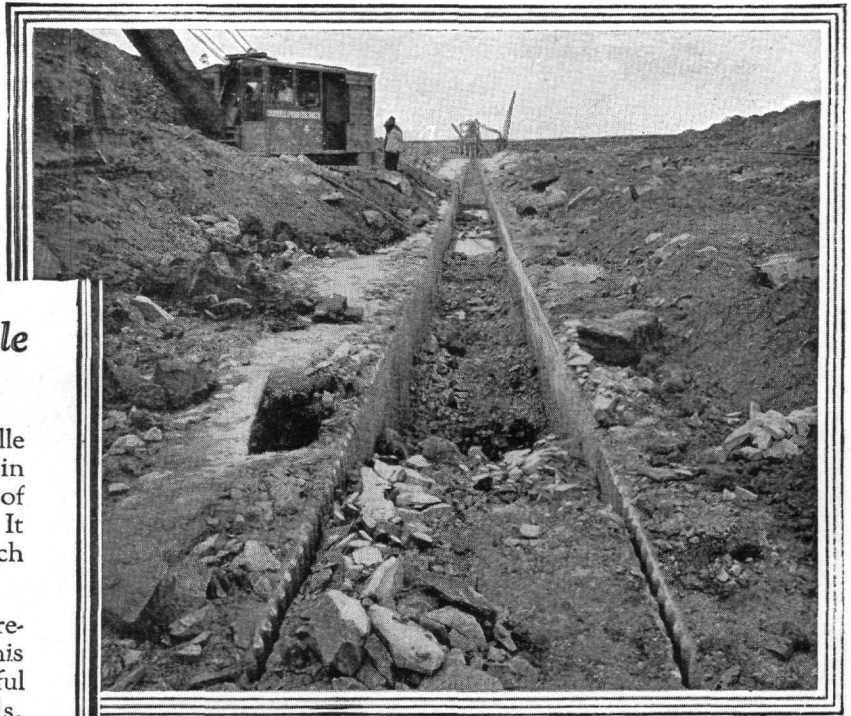
Actual work on the Louisville Hydro-Electric Project was started in the fall of 1926, and by the end of 1928 the plant will be in operation. It will ultimately have ten units, each of 10,000-hp. capacity.

A 9,000-ft. keyway anchors the retaining wall. The channelling of this keyway was entrusted to powerful "Leyner-Ingersoll" Drifter Drills, which were mounted vertically on long quarry-bars. Under this method the work progressed far more rapidly than had originally been expected.

"Jackhammer" Drills were used in excavating for the powerhouse, while I-R blacksmith equipment was installed to handle the hundreds of drill steels required daily. Type Twenty Portable Compressors supplied the air.

On this, as on hundreds of other big engineering projects, Ingersoll-Rand compressed air machinery was employed exclusively.

**INGERSOLL-RAND COMPANY**  
11 Broadway, New York City  
Offices in principal cities the world over



Above: A section of the 9000-ft. keyway and a view of the drills at work.

Left: "Leyner-Ingersoll" X-72 Drifter Drill.

# Ingersoll-Rand





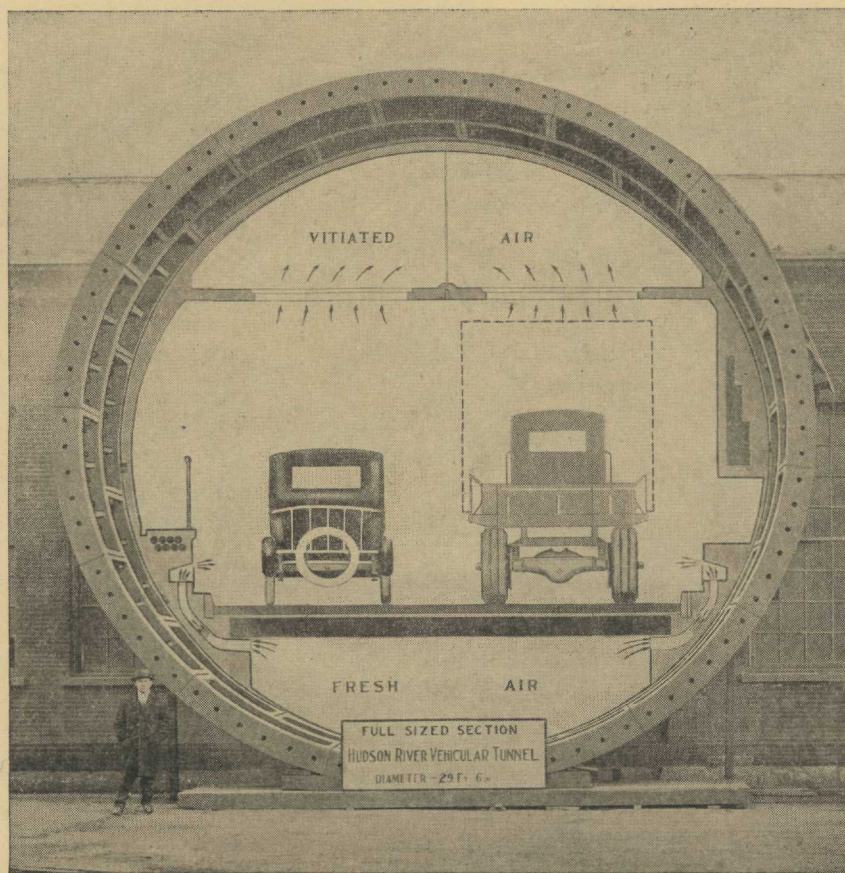
R. E. BEDWORTH,  
Salesman,  
Yale, '17



J. P. MAXWELL,  
Head Design Engineer,  
Missouri, '19



M. J. RUBEL,  
Ass't Design Engineer,  
Institute of Technology,  
Vienna, Austria, '21



H. H. RUGG,  
Design Engineer,  
South Dakota,  
School of Mines, '16



R. De CAMP,  
Engineer,  
Montana, '17



J. E. WALTER,  
Contract Administration,  
Carnegie Tech, Ex '23

## YOUNGER COLLEGE MEN ON RECENT WESTINGHOUSE JOBS

# The Holland Tunnel

*Where do young college men get in a large industrial organization? Have they opportunity to exercise creative talent? Is individual work recognized?*

**T**HE HOLLAND TUNNEL is one of engineering's greatest triumphs, because—

- it is twice the size of any tunnel ever bored beneath the bed of the Hudson River.
- it is over a mile and a half long.
- it is designed for automobiles to use.

Because they generate poisonous car-

bon monoxide gas, motor cars create an entirely new need for tunnel ventilation. Yet even when the Holland Tunnel is filled to capacity and 2000 motor cars are passing through it in each direction, the air is fresh and pure.

This is a type of engineering undertaking with which young men in an organization of the size of Westinghouse frequently

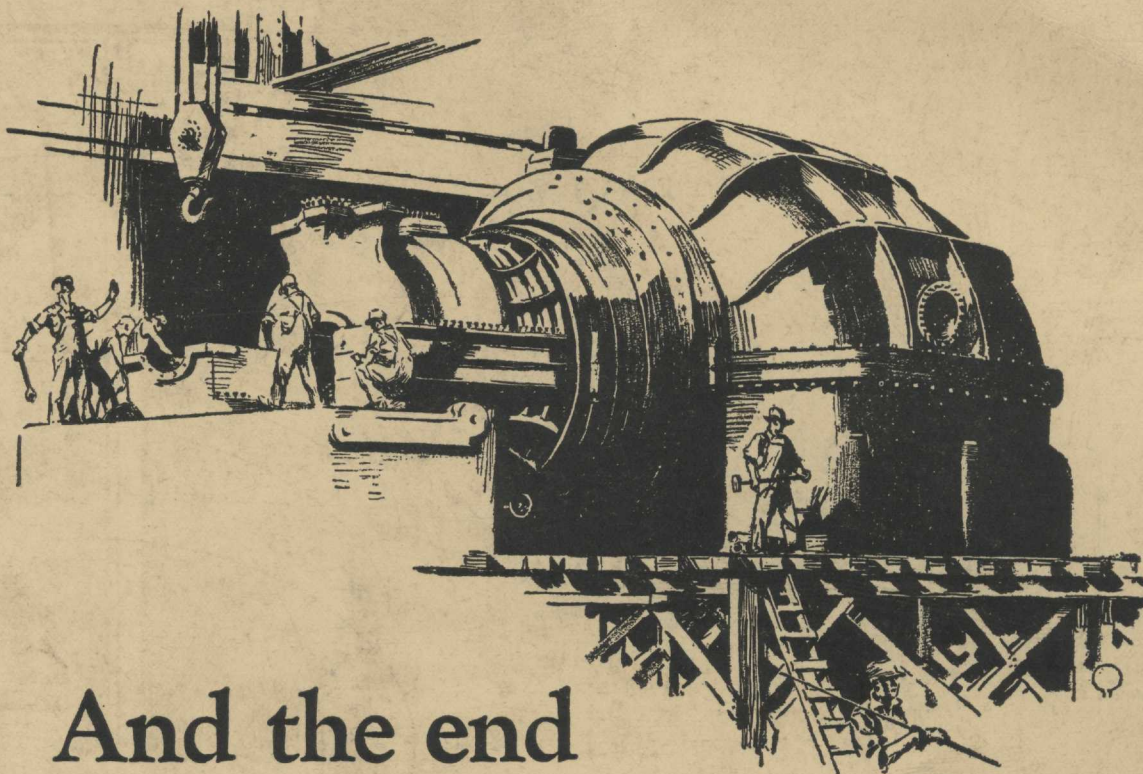
are brought into intimate contact. Opportunities to work on the stupendous, the never-before-undertaken, are not rare here. Hence young men of capacity, of enterprise, of genius, find much to challenge their imaginations and abilities.

A battery of 56 fans driven by Westinghouse motors pump fresh air into, and foul air out of, the Holland Tunnel. Twenty-eight more Westinghouse-motored fans are a reserve. Westinghouse planned the lighting system in the tunnel; also the system of remote control.

# Westinghouse







## And the end is not yet in sight

In the year that many of today's college students were born, a new child—the steam turbine—came into the industrial world. Its birth was celebrated by the installation of a 5000-kw. unit, in 1903. In 24 years the turbine has grown to giant size, with a 165,000-kw. unit to go into operation in 1928, and a 208,000-kw. unit under construction.

Experienced engineers have made outstanding contributions to its development—making possible these tremendous units. A young engineer, only a few years out of college, has by “flow casts” enabled designers to visualize the flow of steam through the intricate passages within the turbine. This has resulted in an improved design of nozzles and buckets. Others have eliminated the causes of resonant vibration and have made possible the production of units

which operate at 1200-lb. pressure and 750 degrees F.

Greater power plant efficiency is being obtained by the extraction of steam from the turbine at different temperatures to heat feed-water on its way to the boiler, and the economies of the mercury vapor process indicate a new range of possibilities.

Rome wasn't built in a day, nor was it built by one man. The power plant, which now delivers a kilowatt-hour of electricity for one-third as much coal as it took a quarter-century ago, is the combined achievement of many engineers working not only on turbines, but on generators, boilers, and the many auxiliary devices. These men have helped to give the world a new force. Progressive leaders in all fields are calling upon electricity for ever-widening services—and the end is not yet in sight.



This monogram identifies the accomplishment of General Electric scientists and engineers. You will find it in power houses, on small motors in the home, on powerful electric locomotives, and in the electrified factories of modern industry.

# GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, NEW YORK

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